

WHAT IS CLAIMED IS:

1 1. A communication entity for compressing messages
2 transmitted using a communication protocol, said
3 communication entity comprising:

4 a dictionary containing at least one symbol string
5 therein, said at least one symbol string corresponding to at
6 least one symbol of a given communication protocol; and

7 a compressor in communication with said dictionary, said
8 compressor using said dictionary to compress said at least
9 one symbol string within a first communication message
10 pursuant to said given communication protocol.

1 2. The communication entity of claim 1, said
2 communication entity further comprising:

3 a decompressor in communication with said dictionary,
4 said decompressor using said dictionary to decompress at
5 least one symbol string within a second communication message
6 pursuant to said given communication protocol.

1 3. The communication entity of claim 1, said
2 communication entity further comprising:

3 a binary code tree in communication with said
4 compressor, said compressor using said binary code tree to
5 compress said at least one symbol string within said first
6 communication message pursuant to said given communication
7 protocol.

1 4. The communication entity of claim 3, wherein said
2 binary code tree comprises a Huffman binary code tree.

1 5. The communication entity of claim 3, wherein said
2 binary code tree comprises a static binary code tree.

1 6. The communication entity of claim 1, wherein said
2 dictionary comprises a static dictionary.

1 7. The communication entity of claim 1, wherein said
2 at least one symbol of said given communication protocol
3 comprises at least one field-name of said given communication
4 protocol.

1 8. The communication entity of claim 1, wherein at
2 least one entry within said dictionary is based upon
3 statistical data flows of said given communication protocol.

1 9. The communication entity of claim 1, said
2 communication entity further comprising:

3 a dynamic dictionary in communication with said
4 compressor, said dynamic dictionary containing at least one
5 second symbol string therein, said at least one second symbol
6 string corresponding to at least one second symbol of a given
7 communication protocol, said compressor using at least one
8 of said dynamic dictionary and said dictionary to compress
9 at least one symbol string within a subsequent communication
10 message pursuant to said given communication protocol.

1 10. The communication entity of claim 9, wherein said
2 compressor uses a sliding window dictionary compression
3 method.

1 11. A communication entity for decompressing messages
2 received using a communication protocol, said communication
3 entity comprising:

4 a dictionary containing at least one symbol string
5 therein, said at least one symbol string corresponding to at
6 least one symbol of a given communication protocol; and

7 a decompressor in communication with said dictionary,
8 said decompressor using said dictionary to decompress said
9 at least one symbol string within a first communication
10 message pursuant to said given communication protocol.

1 12. The communication entity of claim 11, said
2 communication entity further comprising:

3 a compressor in communication with said dictionary, said
4 compressor using said dictionary to compress at least one
5 symbol string within a second communication message pursuant
6 to said given communication protocol.

1 13. The communication entity of claim 11, said
2 communication entity further comprising:

3 a binary code tree in communication with said
4 decompressor, said decompressor using said binary code tree
5 to decompress said at least one symbol string within said
6 first communication message pursuant to said given
7 communication protocol.

1 14. The communication entity of claim 13, wherein said
2 binary code tree comprises a static binary code tree.

1 15. The communication entity of claim 13, wherein said
2 binary code tree comprises a Huffman binary code tree.

1 16. The communication entity of claim 11, wherein said
2 dictionary comprises a static dictionary.

1 17. The communication entity of claim 11, wherein said
2 at least one symbol of said given communication protocol
3 comprises at least one field-name of said given communication
4 protocol.

1 18. The communication entity of claim 11, wherein at
2 least one entry within said dictionary is based upon
3 statistical data flows of said given communication protocol.

1 19. The communication entity of claim 11, said
2 communication entity further comprising:

3 a dynamic dictionary in communication with said
4 decompressor, said dynamic dictionary containing at least one
5 second symbol string therein, said at least one second symbol
6 string corresponding to at least one second symbol of a given
7 communication protocol, said compressor using at least one
8 of said dynamic dictionary and said dictionary to decompress
9 at least one symbol string within a subsequent communication
10 message pursuant to said given communication protocol.

1 20. The communication entity of claim 19, wherein said
2 decompressor uses a sliding window dictionary decompression
3 method.

1 21. A communication system for facilitating compressed
2 message communication, said communication system comprising:

3 a first communication entity for sending a first
4 communication message, said first communication entity
5 comprising:

6 a first dictionary containing at least one symbol
7 string therein, said at least one symbol string corresponding
8 to at least one symbol of a given communication protocol; and

9 a first compressor in communication with said first
10 dictionary, said first compressor using said first dictionary
11 to compress a given symbol string within a first
12 communication message pursuant to said given communication
13 protocol; and

14 a second communication entity, in communication with
15 said first communication entity, for receiving said first
16 communication message, said second communication entity
17 comprising:

18 a second dictionary containing at least one symbol
19 string therein, said at least one symbol string corresponding
20 to said at least one symbol of said given communication
21 protocol; and

22 a first decompressor, in communication with said
23 second dictionary, said first decompressor using said second
24 dictionary to decompress said given symbol string within said
25 first communication message pursuant to said given
26 communication protocol, said first dictionary being
27 substantially equivalent to said second dictionary.

1 22. The communication system of claim 21, wherein said
2 first communication entity further comprises:

3 a second decompressor in communication with said first
4 dictionary, said second decompressor using said first
5 dictionary to decompress a given symbol string within a
6 second communication message pursuant to said given
7 communication protocol, said second communication message
8 being received from said second communication entity.

1 23. The communication system of claim 22, wherein said
2 second communication entity further comprises:

3 a second compressor in communication with said second
4 dictionary, said second compressor using said second
5 dictionary to compress a given symbol string within said

6 second communication message pursuant to said given
7 communication protocol.

1 24. The communication system of claim 21, wherein said
2 first communication entity further comprises:

3 a third dictionary containing at least one symbol string
4 therein, said at least one symbol string corresponding to at
5 least one symbol of a given communication protocol; and

6 a second decompressor in communication with said third
7 dictionary, said second decompressor using said third
8 dictionary to decompress a given symbol string within a
9 second communication message pursuant to said given
10 communication protocol, said second communication message
11 being received from said second communication entity.

1 25. The communication system of claim 24, wherein said
2 second communication entity further comprises:

3 a fourth dictionary containing at least one symbol
4 string therein, said at least one symbol string corresponding
5 to at least one symbol of a given communication protocol; and

6 a second compressor in communication with said fourth
7 dictionary, said second compressor using said fourth
8 dictionary to compress said given symbol string within said
9 second communication message pursuant to said given
10 communication protocol, said third dictionary being
11 substantially equivalent to said fourth dictionary.

1 26. The communication system of claim 21, wherein said
2 at least one symbol of said given communication protocol
3 comprises at least one field-name of said given communication
4 protocol.

1 27. The communication system of claim 21, wherein at
2 least one entry within said first dictionary is based upon
3 statistical data flows of said given communication protocol.

1 28. The communication system of claim 24, wherein at
2 least one entry within said third dictionary is based upon
3 statistical data flows of said given communication protocol.

1 29. The communication system of claim 21, wherein said
2 first dictionary comprises a static dictionary.

1 30. The communication system of claim 21, wherein said
2 second dictionary comprises a static dictionary.

1 31. The communication system of claim 24, wherein said
2 third dictionary comprises a static dictionary.

1 32. The communication system of claim 25, wherein said
2 fourth dictionary comprises a static dictionary.

1 33. A method of facilitating compressed message
2 communication using a communication protocol, said method
3 comprising the steps of:

4 matching at least one symbol string within a first
5 communication message to at least one matched symbol string
6 within a first dictionary;

7 transmitting reference information indicative of a
8 location of said at least one matched symbol string within
9 said first dictionary;

10 receiving said reference information indicative of a
11 location of said at least one matched symbol string within
12 said first dictionary;

13 associating said received reference information to at
14 least one corresponding symbol string within a second
15 dictionary, said at least one corresponding symbol string
16 within said second dictionary substantially equal to said at
17 least one matched symbol string within said first dictionary;
18 and

19 reconstructing said first communication message from
20 said at least one corresponding symbol string within said
21 second dictionary.

1 34. The method of claim 33, wherein at least one of
2 said first dictionary and said second dictionary comprises
3 a static dictionary.

1 35. The method of claim 33, wherein at least one of
2 said first dictionary and said second dictionary comprises
3 a dynamic dictionary.

1 36. A method of facilitating compressed message
2 communication using a communication protocol, said method
3 comprising the steps of:

4 searching a dictionary for a symbol string corresponding
5 to said communication protocol, said symbol string being
6 contained within a communication message;

7 upon affirmative confirmation that said dictionary
8 contains said symbol string, retrieving from said dictionary
9 a compressed symbol string associated with said symbol
10 string;

11 replacing, in said communication message, said symbol
12 string with said compressed symbol string; and

13 transmitting said communication message using said
14 communication protocol.

1 37. The method of claim 36, wherein said dictionary
2 comprises a static dictionary.

1 38. The method of claim 36, wherein said dictionary
2 comprises a dynamic dictionary.

1 39. A method of facilitating compressed message
2 communication using a communication protocol, said method
3 comprising the steps of:

4 receiving a communication message based upon said
5 communication protocol, said communication message including
6 a compressed symbol string;

7 retrieving from a dictionary, an uncompressed symbol
8 string associated with said compressed symbol string, said
9 uncompressed symbol string corresponding to said
10 communication protocol; and

11 replacing, in said communication message, said
12 compressed symbol string with said uncompressed symbol
13 string.

1 40. The method of claim 39, wherein said dictionary
2 comprises a static dictionary.

1 41. The method of claim 39, wherein said dictionary
2 comprises a dynamic dictionary.